

# CTG

## Core balance transformer



### Benefits

- High sensitivity.
- Wide range.
- Easy installation.

### Description

CTG is a family of "core balance transformers". These devices detect the difference in the current flow on the lines running through the coil.

They work on either single phase or three-phase mains.

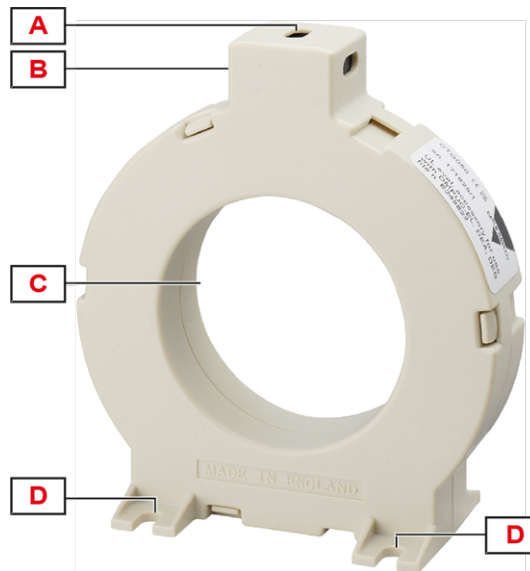
### Applications

CTGs are used for detecting current leaks, potentially hazardous, on electric loads. Typically on electric motors, pumps or devices installed in metallic structures. They are approved to be used in conjunction with Carlo Gavazzi DEA71 and DEB71 earth leakage monitoring relays.

### Order code

Internal diameter	Component name/part number
35 mm	CTG035
50 mm	CTG050
70 mm	CTG070
120 mm	CTG120
161 mm	CTG160
210 mm	CTG210

**Structure**



Element	Component	Function
A	Terminals	CT secondary, connection cables
B	Terminals screws	CT secondary, tightening screws
C	Hole	For current insulated wire
D	Fixing flange	Panel mount fixing flange (CTG035 also with DIN rail adapter)

## Features

### Input / Output

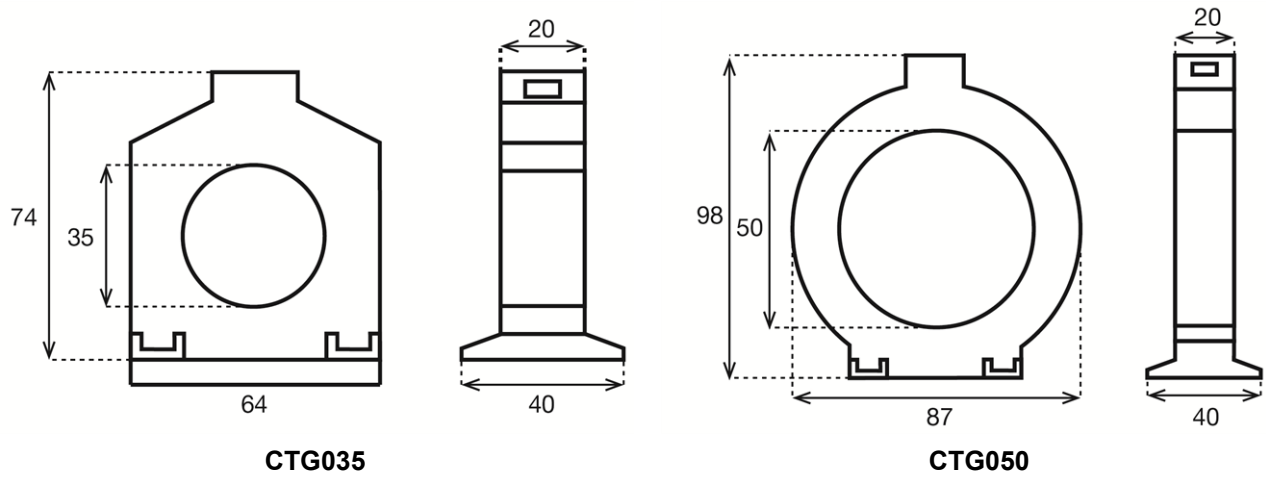
<b>Current transformer ratio</b>		1000/1
<b>Frequency range</b>		50 to 60 Hz
<b>Max. system voltage</b>		720 VAC
<b>Rated insulation level</b>		3 k VAC
<b>Nominal current (In)</b>	<b>CTG035</b>	80 A
	<b>CTG050</b>	100 A
	<b>CTG070</b>	160 A
	<b>CTG120</b>	250 A
	<b>CTG160</b>	320 A
	<b>CTG210</b>	400 A
<b>Short-term thermal current (Ith)</b>		50 x In
<b>Dynamic current (Idyn)</b>		2.5 x Ith
<b>Overload current</b>	<b>CTG035</b>	480 A
	<b>CTG050</b>	600 A
	<b>CTG070</b>	960 A
	<b>CTG120</b>	1500 A
	<b>CTG160</b>	1920 A
	<b>CTG210</b>	2400 A

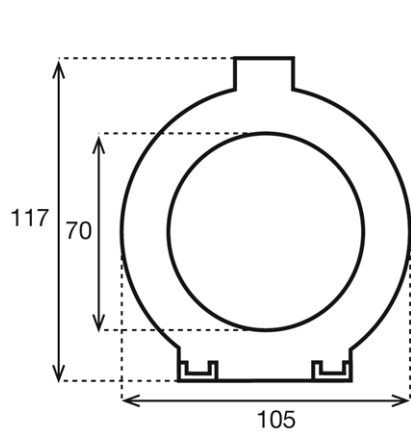
### Connections

<b>Primary connection</b>	Single phase or 3 phase mains, pass through
<b>Secondary connection</b>	Screw type 2 x 2.5 mm <sup>2</sup>

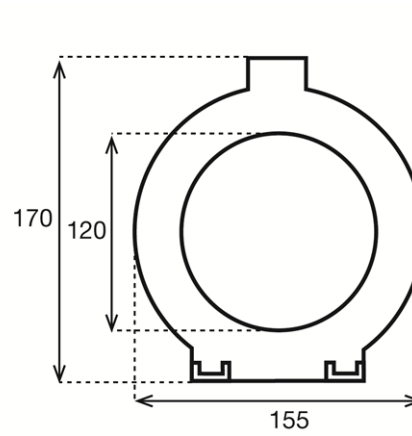
**General**

<b>Dimensions (W x H x D)</b>	<p>CTG35: 64 x 74 x 20 mm (2.52 x 2.91 x 0.79 in)</p> <p>CTG50: 87 x 98 x 20 mm (3.43 x 3.86 x 0.79 in)</p> <p>CTG070: 105 x 117 x 20 mm (4.13 x 4.61 x 0.79 in)</p> <p>CTG120: 155 x 170 x 20 mm (6.10 x 6.69 x 0.79 in)</p> <p>CTG160: 241 x 254 x 33 mm (9.49 x 10 x 1.30 in)</p> <p>CTG210: 290 x 304 x 33 mm (11.42 x 11.97 x 1.30 in)</p>
<b>Weight</b>	<p>CTG035: approx. 80 g (2.82 oz)</p> <p>CTG050: approx. 100 g (3.53 oz)</p> <p>CTG070: approx. 125 g (4.41 oz)</p> <p>CTG120: approx. 235 g (8.29 oz)</p> <p>CTG160: approx. 1220 g (43.03 oz)</p> <p>CTG210: approx. 1860 g (65.61 oz)</p>
<b>Internal diameter</b>	<p>CTG035: 35 mm (1.38 in)</p> <p>CTG050: 50 mm (1.97 in)</p> <p>CTG070: 70 mm (2.76 in)</p> <p>CTG120: 120 mm (4.72 in)</p> <p>CTG160: 161 mm (6.34 in)</p> <p>CTG210: 210 mm (8.27 in)</p>

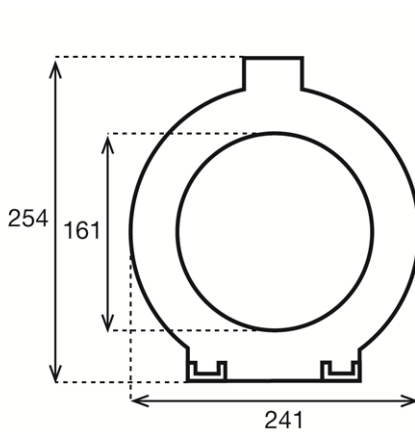




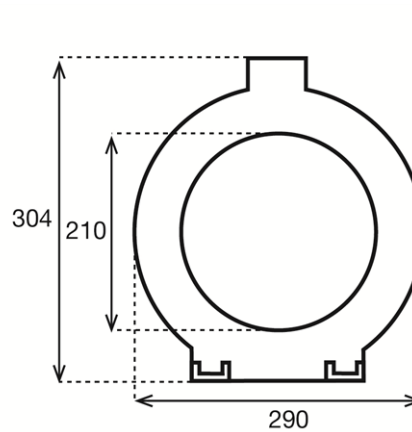
**CTG070**



**CTG120**



**CTG160**






**CTG210**

 **Environmental**

<b>Operating temperature</b>	-5 to 50 °C (23 to 122 °F)
<b>Storage temperature</b>	-5 to 50 °C (23 to 122 °F)
<b>Relative humidity</b>	< 95%
<b>Protection degree</b>	IP20

## Compatibility and conformity

Marking	  
Directives	2014/35/EU (LVD - Low voltage) 2014/30/EU (EMC - Electromagnetic compatibility) 2011/65/EU, 2015/863/EU (RoHS)
Standards	Immunity: EN61000-6-1 Emission: EN61000-6-3 Additional requirements for current transformers: IEC 61869-2
Approvals	cUL (when used in conjunction with Carlo Gavazzi devices: DEA71, DEB71 or DMPUC-EL)

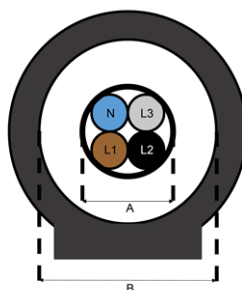
## Operating description

When the vectorial sum of the current flowing to the load and the one flowing on the NEUTRAL cable (if present) is different from "0" (zero), a current on the CT secondary circuit is generated.

The current difference is usually caused by a leak which may cause a hazard.




The output signal can be used by a residual current monitoring device which will disconnect the monitored load or send an alarm signal.

Select the correct CTG size according to mains cable dimension: the dimension of CTG shall be:  $b \geq 1.5 * a$ .



## References

**Further reading**

Information	Where to find it	QR code
<b>DEA71 datasheet</b>	<a href="https://www.gavazziautomation.com/images/PIM/DATASHEET/ENG/DEA71_DS_ENG.pdf">https://www.gavazziautomation.com/images/PIM/DATASHEET/ENG/DEA71_DS_ENG.pdf</a>	
<b>DEB71 datasheet</b>	<a href="https://www.gavazziautomation.com/images/PIM/DATASHEET/ENG/DEB71_DS_ENG.pdf">https://www.gavazziautomation.com/images/PIM/DATASHEET/ENG/DEB71_DS_ENG.pdf</a>	
<b>DEA / DEB / CTG instruction manual</b>	<a href="https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/DEA_DEB_IM.pdf">https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/DEA_DEB_IM.pdf</a>	
<b>PSS selection tool</b>	<a href="https://carlogavazzi-pss.com/">https://carlogavazzi-pss.com/</a>	



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